

WHAT IS CLAIMED IS:

- Sub 1
1. A glow discharge detector, comprising:
a first annular member,
a pair of annular members mounted in spaced relation in said first annular member,
a member having a tapering end mounted in one of said pair of annular members, and
a solid member mounted in another of said pair of annular members.
2. The detector of Claim 1, wherein said first annular member comprises a glass tube.
3. The detector of Claim 2, wherein said pair of annular members comprise a pair of stainless steel tubes.
4. The detector of Claim 3, wherein each of said members is composed of tungsten.
5. The detector of Claim 4, wherein said pair of annular members are mounted in said first annular member by a sealant.
6. The detector of Claim 5, wherein said sealant is composed of an epoxy.
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Sub A13

7. The detector of Claim 6, wherein said tapering end of said member is tapered to a point, and wherein said point is located closely adjacent to said solid member.

8. The detector of Claim 1, additionally including an electrical circuit including a power supply, a capacitor, and a plurality [pair] of resistors.

9. The detector of Claim 8, wherein said capacitor is electrically connected intermediate a [said] pair of resistors.

10. The detector of Claim 9, wherein said pair of resistors are each of a different size.

Sub A14

11. In a hand-held gas chromatograph, the improvement comprising:
a direct current, constant wave glow discharge detector,
said detector including a solid anode, and
including said detector including a Langmuin-like probe whereby large variations of electron density due to trace amounts of impurities in the carrier gas of the gas chromatograph can be directly measured.

12. The improvement of Claim 11, wherein the constant wave glow discharge of the detector is controlled through a biased resistor.

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13. The improvement of Claim 11, wherein said glow discharge detector includes:
an outer annular tube composed of glass,

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a pair of annular tubes mounted in spaced relation in said outer annular tube and composed of stainless steel,

said pair of annular tubes being mounted in said outer annular tube by a sealant consisting of an epoxy,

said Langmuir-like probe comprising a pointed member mounted in one of said spaced pair of annular tubes, with a pointed end thereof be located closely adjacent another of said pair of annular tubes, and said pointed member being composed of tungsten, and

said solid anode being mounted in said another of said pair of annular tubed.

14. The improvement of Claim 14, wherein said pointed member is mounted in said one of said pair of annular tubes by at least one pinched area in said one of said pair of annular tubes.

15. The improvement of Claim 14, wherein said pointed member, said solid anode, and said pair of annular tubes are each mounted coaxially in said outer annular tube.

16. The improvement of Claim 14, wherein said pair of annular tubes are only partially located within said outer annular tube.

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17. The improvement of Claim 14, wherein, said pointed member and said solid anode are composed of, preferably, refractory metals with low work functions such as, tungsten, Molybdenum, Uranium and etc. or normal metals like copper or gold which would not be "poisoned" by oxygen.